

2. Please replace the title of Table 18 on page 62 as follows:

Table 18: WIR-AM GUR 4050 bar stock, Total dose =140 kGy, 75 kGy/pass

3. Please replace the title of Table 19 on page 67 as follows:

Table 19: WIR-AM GUR 1050 bar stock, Total dose = 150 kGy, 75 kGy/pass

In the Claims:

Please amend claims 131, 137, 139-142, and 147 as follows:

C 1
131. (once amended) The medical prosthesis of claim 124, wherein said ultra high molecular weight polyethylene has a polymeric structure with less than about 50% crystallinity and less than about 940 MPa tensile elastic modulus, so as to reduce production of fine particles from said prosthesis during wear of said prosthesis.

C 2
137. (once amended) A method for making a cross-linked ultra high molecular weight polyethylene having multiple melting peaks, comprising the steps of: heating ultra high molecular weight polyethylene having polymeric chains to a temperature below the melting point of the polyethylene; irradiating said ultra high molecular weight polyethylene so as to cross-link said polymeric chains; and cooling said irradiated ultra high molecular weight polyethylene.

C3
139. (once amended) A method for making a cross-linked ultra high molecular weight polyethylene, comprising the steps of: heating ultra high molecular weight polyethylene having polymeric chains to a temperature below the melting point of the polyethylene; irradiating said ultra high molecular weight polyethylene so as to (1) cross-link said polymeric chains and (2) to generate sufficient heat to at least partially melt the ultra high molecular weight polyethylene; and cooling said irradiated ultra high molecular weight polyethylene.

140. (once amended) A method for making cross-linked ultra high molecular weight polyethylene, comprising the steps of: heating ultra high molecular weight polyethylene to a temperature of no more than about 90°C; irradiating said ultra high molecular weight polyethylene to cross-link the ultra high molecular weight polyethylene and to generate sufficient heat to at least partially melt the ultra high molecular weight polyethylene; and cooling said irradiated ultra high molecular weight polyethylene.

141. (once amended) A method for making cross-linked ultra high molecular weight polyethylene, comprising the steps of: heating ultra high molecular weight polyethylene at a temperature ranging from about 90°C to below the melting point; irradiating said ultra high molecular weight polyethylene to cross-link the ultra high molecular weight polyethylene and to generate sufficient heat to at least partially melt the ultra high molecular weight polyethylene; and cooling said irradiated and heated ultra high molecular weight polyethylene.

C4
142. (twice amended) A method for making a cross-linked ultra high molecular weight polyethylene having substantially no detectable free radicals, comprising the steps of: heating ultra high molecular weight polyethylene having polymeric chains to a temperature below the melting point of the polyethylene; irradiating said ultra high molecular weight polyethylene with more than 5 Mrads of radiation so as to cross-link

C4 said polymeric chains, wherein the radiation heats the ultra high molecular weight
Cond polyethylene; and cooling said heated ultra high molecular weight polyethylene.

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C5 147. (twice amended) A method for making a cross-linked polyethylene, comprising the steps of: heating polyethylene at a temperature that is below its melting point; irradiating the polyethylene so as to (1) cross-link polymeric chains in the polyethylene and (2) to generate sufficient heat to at least partially melt the polyethylene; and cooling the irradiated polyethylene.